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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/692,707	10/24/2003	Kenny K. Chinn	AB-123U1 / 585-0026US-C	9782
29855 7590 02/01/2007 WONG, CABELLO, LUTSCH, RUTHERFORD & BRUCCULERI, L.L.P. 20333 SH 249 SUITE 600 HOUSTON, TX 77070			EXAMINER CAZAN, LIVIUS RADU	
			ART UNIT 3729	PAPER NUMBER
SHORTENED STATUTORY PERIOD OF RESPONSE			MAIL DATE	DELIVERY MODE
3 MONTHS			02/01/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/692,707

Applicant(s)

CHINN ET AL.

Examiner

Livius R. Cazan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 January 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1 and 3-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 1/12/2007 has been entered.

### ***Claim Rejections - 35 USC § 103***

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
3. Claims 1, 3, 5, 6, and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Honert (US5000194 to van den Honert et al.) in view of Iversen (US6024702).

Regarding claims 1 and 3, Honert discloses:

- positioning a plurality of electrical contacts (electrodes 40, Figs. 4 and 5) in a pin-shaped mold (see col. 3, lns. 55-60); the mold must be pin-shaped, since the resulting product is pin-shaped; see Fig. 1.
- arranging the plurality of electrical contacts in at least two rows (see Fig. 1);
- providing a plurality of conducting wires (26 in Figs. 2-5), each having an end (see end of wires 26 in the figures);

- electrically connecting the end of at least one conducting wire to each of the electrical contacts (see Fig. 5; see step 82 in Fig. 6; see col. 3, Ins. 25-50);
- introducing insulating material into the mold to form a pin with electrical contacts positioned in at least two rows along the pin (see step 92 in Fig. 6; see col. 3, Ins. 55-65).

See col. 3, Ins. 15-65 and Fig. 6 for an overview of the process.

However, Honert does not disclose connecting the end of at least one conducting wire to each of the electrical contacts via a printed circuit board, nor positioning the printed circuit board in the mold.

Iversen teaches the concept of employing a PCB as a connection means between contacts and lead wires in order to lower manufacturing costs and improve quality control (col. 2, Ins. 25-30). Specifically, contacts 22 (Figs. 5-10) are connected to connectors 16 (Figs. 5-10) via the traces 24 of a printed circuit 12 (Figs. 5-10), with lead wires being connected to connectors 16 (see Fig. 11; see col. 4, Ins. 1-5; see col. 3, Ins. 40-55 and Figs. 1-4).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of Honert, in view of the teachings of Iversen, by employing a PCB to connect the contacts to the ends of the electrical wires, in order to lower manufacturing costs and improve quality control, thereby taking the place of the portion of the wires located in the mold.

Regarding claim 5, Honert discloses forming the contacts (electrodes 40) of platinum or platinum/iridium (col. 4., ln. 44)

Regarding claim 6, Honert discloses rows that converge toward each other (see Fig. 1), and therefore are not straight.

Regarding claim 9, the pin disclosed by Honert comprises lead wires 26 (see col. 3, ln. 14; see Fig. 5), such that the pin is configured to provide and capable of providing electrical connection between an external *lead* cable and some other element, such as one selected from the list recited in claim 9.

4. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Honert and Iversen, as applied to claim 1 above, in view of Lemke (US5768777).

Honert discloses the same invention as the applicant, except for temporarily holding together the electrical contacts in an array with bridging sections between the contacts, and cutting the bridging sections so as to separate the contacts.

Lemke teaches forming a connector by injection molding, wherein contacts are connected to a carrier strip (thereby providing bridging sections between the contacts), and wherein after the plastic injected into the mold sets, the strip is removed, thereby separating the contacts (see carrier strip 70 in Fig. 9; see col. 11, lns. 35-67).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to hold the contacts together using bridging sections, in view of the teachings of Lemke, and to cut the bridging sections to thereby separate the contacts, in order to be able to insert all the contacts into the mold at once.

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5. Claims 1, 3, 5, 6, and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fischer (US6162101 to Fischer et al.) in view of Honert and further in view of Iversen.

Regarding claims 1, 3, and 6, Fischer discloses:

- providing a plurality of electrical contacts (5A-5H in Fig. 1)
- arranging the plurality of electrical contacts in at least two rows (each of the ring-shaped electrodes forming a circular (i.e. not straight) row around the pin; see Fig. 1);
- providing a plurality of conducting wires, each having an end (see col. 2, ln. 65 - col. 3, ln. 5; see lead cable in Fig. 1);
- electrically connecting the end of at least one conducting wire to each of the electrical contacts (clearly, each electrode 5A-5H has a wire attached to it; see previous step);

Fischer does not disclose how the electrical contacts are attached to the body, i.e. does not specify that a pin-shaped mold is used to form the pin having contacts and wires by injecting an insulating material into the mold, nor employing a PCB to connect the contacts and the wires.

Honert in view of Iversen teaches this method of forming a pin (as discussed in the rejection of claim 1 as unpatentable over Honert in view of Iversen above.

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to form the pin of Fischer by the method taught by Honert and Iversen, in order to utilize a cheap and simple method of forming the pin.

Further, to the extent the applicant disagrees that Fischer discloses at least two rows of contacts, Fischer discloses that the connector does not have to be a linear array, but instead could have other shapes (col. 3, Ins. 1-15).

Honert teaches arranging a plurality of contacts in two rows (as previously discussed).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to form the pin connector of Fischer with two rows of contacts, in view of the teachings of Honert, in order to provide a connector with double the number of contacts.

Regarding claim 5, Fischer discloses the same invention as the applicant, except for the particular metal used for the contacts being one of those listed in claim 5 of the present application.

As previously discussed, Honert discloses forming the electrodes/contacts on the pin from platinum or platinum iridium.

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to form the contacts of Fischer from such a metal, in order to form contacts that are biocompatible.

Regarding claim 9, Fischer discloses a connector pin configured to provide electrical connection to a lead containing an electrode array (2 in Fig. 1).

6. Claims 7, 8, 12, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fischer, Honert, and Iversen as applied to claim 1 above, in view of Comben (US5354326 to Comben et al.).

Regarding claims 12 and 13, it is deemed that the means for maintaining alignment of the pin during use, and the means for assuring proper orientation of the pin during use comprise a hooked groove, as described in paragraph [0094] on page 17 or a notch, as described in paragraph [0097], or their equivalents. Furthermore it is deemed that such equivalents constitute various alignment/keying means known in the art, since keyed connectors only fit in one possible orientation, and therefore alignment and orientation of the connectors is maintained during use.

Regarding claims 8, 12, and 13, Fischer, Honert, and Iversen disclose the same invention as the applicant, except for a keying feature, so as to maintain alignment and orientation of the connector during use.

Comben discloses a pin connector having such a feature (see col. 5, lns. 55-68; see keyed corner/notch 50 in Figs. 8a-8d).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide a keying feature in the pin of Fischer, Honert, and Iversen, in view of the teachings of Comben in order to permit the pin to be inserted in only one way into a corresponding receptacle.

Regarding claim 7, Fischer, Honert, Iversen, and Comben disclose the same invention as the applicant, except for providing at least one groove in the pin. However, as discussed above, Fischer, Honert, Iversen, and Comben together provide a keying feature.

At the time the invention was made, it would have been obvious matter of engineering design choice to a person of ordinary skill in the art to provide the pin of



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Fischer, Honert, Iversen, and Comben with a groove, instead of a notch/keyed corner, because Applicant has not disclosed that the groove provides an advantage, is used for a particular purpose, or solves a stated problem that would not be provided or solved by some other equivalent keying feature, such as a notch. One of ordinary skill in the art, furthermore, would have expected the notch/keyed corner of Fischer together with Honert, Iversen, and Comben and the invention claimed by the Applicant to work equally well with either the notch or the groove.

Therefore it would have been prima facie obvious to modify the pin connector of Fischer, Honert, Iversen, and Comben to obtain the invention as specified in claim 7 because such a modification would have been considered a mere design consideration which fails to patentably distinguish over the prior art of Fischer, Honert, Iversen, and Comben.

7. Claims 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fischer, Honert, and Iversen as applied to claim 1 above, in view of Barnick (US5232383).

Regarding claim 10, it is deemed that the means for securely holding the pin comprise a grooved portion, as described in paragraph [0099] on page 18 or an equivalent structure which facilitates holding the pin securely and also provides a strain relief.

Regarding claims 10 and 11, Fischer together with Honert and Iversen disclose the same invention as the applicant, including a pin having a proximal portion and a

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distal portion (proximal end is attached to the electrode lead in Fig. 1 of Fischer; distal end is the end indicated at 54 in Fig. 1 of Fischer).

Fischer, Honert, and Iversen do not disclose means for securely holding the pin and forming a strain relief at the proximal portion of the pin.

Barnick teaches forming a portion on the end of a connector which facilitates holding the pin securely and acts as a strain relief for the lead attached to the connector (see strain relief portion on end 13, Fig. 1A).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to provide a strain relief portion at the proximal end of the pin of Fischer Honert, and Iversen, in view of the teachings of Barnick, in order to relieve strain on the lead attached to the pin, and to facilitate holding the pin securely (due to the notches on the strain relief; see Fig. 1A).

8. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Honert in view of Iversen as applied to claim 1, or over Fischer in view of Honert and further in view of Iversen, both in view of applicant's admitted prior art (APA). It is deemed that the means for activating an electrical connection comprise an electrically or mechanically activated switch, as described on page 18, paragraph [0100], or an equivalent structure.

Honert and Iversen/Fischer, Honert, and Iversen do not disclose providing means for activating an electrical connection.

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APA teaches that means for activating an electrical connection, such as an electrically or mechanically activated switch, are known in the art (see page 18, paragraph [0100], Ins. 2-5);

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to provide such means as described above, in view of the teachings of APA, in order to allow for the activation of an electrical connection.

### ***Response to Arguments***

9. Applicant's arguments filed 1/12/2007 have been fully considered but they are not persuasive. The newly added limitations (i.e. "wherein the electrical contacts are not formed as part of the printed circuit board") do not overcome the prior art as applied in the Final Rejection mailed 10/13/2006. On page 18 and 19, para. [0101], the present specification discloses the method of attaching the contacts to the PCB. The contacts 240 (as shown in Fig. 11C) are soldered to contact pads 304 of the PCB. Iversen discloses the same method of attaching contacts, i.e. by soldering contacts 22 to contact pads on the PCB (see col. 4, Ins. 55-65).

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Livius R. Cazan whose telephone number is (571) 272-8032. The examiner can normally be reached on 7:30AM-4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Vo can be reached on (571)272-4690. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

LRC 01/26/2007

A handwritten signature in black ink, appearing to read 'PETER VO', with a long horizontal line extending to the right.

**PETER VO**  
**SUPERVISORY PATENT EXAMINER**  
**TECHNOLOGY CENTER 3700**